Trends-in-Medicine

February 2004
By Lynne Peterson

SUMMARY

The cosmetic market for Allergan's Botox is still growing, and new dermal fillers are unlikely to affect Botox use, either positively or negatively. Botox pricing is very competitive, and patients are shopping price. Inamed's Dysport is likely to be a viable competitor to Botox. ♦ Doctors were surprised and discouraged by the FDA's delay in approving silicone breast implants, but they and their patients are satisfied with saline implants. ♦ Medicis' Restylane has gotten off to a good start. Doctors who have already started using it are pleased with the results. Restylane is expected to take significant market share from collagen implants while also expanding the market but not affect Botox use. ♦ In dermal fillers, there is little excitement over Inamed's Hylaform or Juvederm or Artes Medical's Artecoll, but BioForm's Radiance is generating interest and off-label usage.

Trends-in-Medicine
Stephen Snyder, Publisher
1879 Avenida Dracaena
Jensen Beach, FL 34957
772-334-7409 Fax 772-334-0856
www.trends-in-medicine.com

American Academy of Cosmetic Surgery

Hollywood, Florida
January 29-February 1

About 400 cosmetic surgeons attended this four-day meeting of the American Academy of Cosmetic Surgery (AACS). A variety of medical specialties are represented within AACS: 24% are dermatologists, 21% oral & maxillofacial surgeons, 16% otolargynologists, 11% general surgeons, 8% plastic and reconstructive surgeons, 6% ophthalmologists, 5% OB/GYNs, and 9% other. The hottest topics were dermal fillers, Botox, breast augmentation, and new surgical procedures.

An AACS survey of members' cosmetic procedures for 2003 found:

- 870,000 patients were treated, a 6.7% increase over 2002.
- The largest area of growth was non-invasive procedures, with Botox, microdermabrsion, and Restylane leading the way. 31% of respondents had already started using Restylane (as of December 2003).
- Botox use increased 11% year-over-year, and more than 90% of cosmetic surgeons perform Botox in their office.
- 70% of doctors do collagen injections.
- Invasive surgical procedures showed only modest growth:
  - Breast augmentation grew 8.5% year-over-year.
  - Liposuction grew 6.3% year-over-year, with 74% performed in an ambulatory setting.
- The most popular male procedures were hair transplantation and restoration, liposuction and blepharoplasty.
- The average age of a cosmetic surgery patient increased slightly to 41.

DERMAL FILLERS

An expert declared, "Fillers are the new aesthetic facial frontier…I believe the biodegradable filters are safe and effective."

The characteristics of an ideal filler include:

- Ready to use without mixing/preparation.
- Sensitization testing not required.
- Not carcinogenic.
- Self-limiting fibroblastic response.
- Non-migrating.
- Consistency similar to surrounding tissue.
- Physiologically biocompatible.
- Reasonable price.

Key Dermal Fillers

Type	Company	Brand
Bovine	Inamed	Zyderm I Zyderm II Zyplast
Bovine + PMMA	Artes Medical	Artecoll/Artefill
	DermaTech	DermaLive
Human	Inamed	CosmoDerm CosmoPlast
	Autologen	Dermalogen
Hyaluronan	Q-Med/Medicis	Restylane Perlane
	Inamed	Hylaform Juvederm
Poly-L-Lactic Acid	Aventis	NewFill
Hydroxylapatite	BioForm	Radiance
Liquid Injectable Silicone	N/A	Dermagen
	Richard James	SilSkin Silikon 1000
Polyacrylamide	N/A	Aquamid
	BioForm	Argiform
	N/A	Amazing gel
	Polymekon (Italy)	Bio-alcamid

ARTES MEDICAL'S Artecoll (Artefill in Europe)

Artecoll is comprised of microspheres that are 75% collagen and 25% PMMA with 0.3% lidocaine, a phosphate buffer and saline. The manufacturer claims Artecoll is "permanent" since the microspheres are not absorbed by the body. Artecoll is awaiting FDA approval, and sources all believe it will be approved by summer 2004.

However, there did not appear to be any excitement about Artecoll. A doctor commented, "FDA approval doesn't mean it will get used." A speaker said, "I'm skeptical of the acryl...It is a glue…If you use Artecoll in the right place, you can get great results, but most doctors just want to shoot it in, and they will get in trouble…Acryl behaves like silicone in the body." An Artecoll investigator said, "I think we should require special certification before someone can use Article…I think doctors tend to be too aggressive and their technique might be incorrect…I think there will be patient demand for Artecoll…Patients want something that seems to last longer…but it needs to be done with judgment, not by cowboys." An expert said, "The smooth vs. fuzzy argument may be correct, and there will be a role for Artecoll, but doctors need to be certified to use it. It should be restricted to upper level injectors only."

The problem is that some Artecoll patients develop granulomas, and there is a potential for microsphere migration to other parts of the body. The microspheres originally were rough or "fuzzy," but now they are highly polished, and the company claims this should reduce the incidence of granulomas. A German doctor said, "Granulomas are still seen with the new formula…In Germany, we don't see a difference between the old and new formulations. I don't accept that explanation." Another speaker warned doctors, "The earlier formulation in Europe was with the rough beads, so be careful when you hear (negative things) about Artefill…I suggest you inject subdermal, not in deep dermal, and build up slowing in three or four sessions…Give an appetizer-size portion, and in two months give more, or the body can have a reaction…This has nice longevity, up to a year…It is very nice for acne scarring…(but) don't give this to lawyers or litigious patients…It is expensive and time-consuming." Another speaker worried about the long-term effects of Artecoll as well as how it is injected, saying, "Artecoll, like DermaLive and DermaDeep, can cause dramatic hardening if injected into the muscle or the deep mucosa of the lip."

AVENTIS'S NewFill (formerly Sculptra)

This filler is comprised of poly-L-lactic acid microparticles (40-63 microns in size). The substance has been used for years in other products, such as sutures. An expert on fillers called this "interesting stuff." He said, "I was particularly blown away by the results. Will it make it? Yes. But this is for deep filling, not intradermal. It is biodegradable, but the results may be more lasting because of the reaction you get to it…It is hugely popular for facial atrophy…This is not FDA-approved, and it won't be for a while. It is interesting, and we need to find out more about it."

BIOFORM'S Radiance

BioForm purchased Radiance from Bristol-Myers Squibb. Radiance is comprised of 35% calcium hydroxylapatite (CaHa) and 65% gel components, in microspheres that are 25-45 µg in size that act as scaffolding for tissue ingrowth. Radiance is FDA-approved for use in ophthalmology, orthopedics and dentistry, for more than 20 years. It is not approved for cosmesis or facial applications, but it is being used off-label to treat nasolabial folds, lip rhytids, glabella, chin rhytids, cheek depressions, prejowl, acne scars, earlobes, etc. The moderator at one session commented, "Radiance is the next generation of dermal filler." Another speaker said, "I haven't tried this, but I understand from a number of individuals (who have) that they are happy with the results." A BioForm official said, "It lasts a long time." An Arizona doctor who uses Radiance said, "Used appropriately and not hyped, it is valuable for larger folds on the face, but I can't say it lasts five to seven years."

The advantages of Radiance are:

- It lasts a long time. In urinary incontinence it has been reported to last six years. A BioForm official said, "We don't expect it to last that long in the face – probably two or three years there."
- It is visible on CT scan, though it doesn't alter dental x-rays.
- It doesn't require a skin test.

Yet, some speakers warned doctors against using Radiance without FDA approval. One said, "Permanent fillers that provide satisfactory results at first might become more visible or create an unnatural appearance as aging progress…One day the snow will melt…Permanent fillers will give permanent problems…Radiance patients look good at four months, but I don't think they will look good in five years. For them to say it is present at five years or gone at 18 months is a little presumptuous at this point…It is a guess...I think people are using a product they don't know a lot about…I'd rather they use Artecoll where we have more data…We have guys using Radiance like collagen, and I know we will see these patients back...I would suggest serious caution about its use." Another speaker said, "I won't use Radiance yet. I'm not saying it is a horrible product, you we need to know more about it before I use it. I've seen incredible results, but I worry about the effect at three or four years."

The disadvantages are:

- It is twice as expensive as Restylane.
- Lack of long-term data.

Doctors questioned about Radiance offered mixed reviews. A Louisiana doctor said, "It is not good for lips, so I won't use it there, but it is good for nasolabial folds…There was a big rush for Radiance before Christmas (2003), but now patients are asking for Restylane."

A trial of Radiance to treat nasolabial folds is due to start by summer 2004. Dr. Thomas Tzikas, a Florida doctor who has been an investigator for Radiance, reported on 90 patients he has treated so far with Radiance. He said, "I've used Radiance for a year and a half, and it's a great product in my practice…This product does an excellent job in men who are difficult to treat…The most demanding area is lip augmentation. I caution not to start using this first in lips…Don't over-inject or you will get nodularity that resolves on its own with or without treatment…I had an 8% incidence of lip nodules in my practice."

Radiance Trial Results

Rating	Appearance	Softness	Patient Satisfaction
Excellent	31%	28%	47%
Good	43%	52%	41%

Radiance Trial Side Effects

Rating	Post-injection ecchymosis	Pain during injections	Post-injection erythema	Post-injection nodules
None	32%	10%	9%	52%
Moderate	17%	50%	43%	N/A
Severe	2%	9%	7%	0%

GENZYME/INAMED'S Hylaform

There was little discussion of this product at the meeting, no new data, and definitely no excitement. An expert said, "I won't use Hylaform. It is made from rooster combs, and I think the protein will be a problem."

INAMED'S Juvederm

This is "the new kid on the block," and doctors didn't know much about it yet. Like Restylane, it is obtained by bacterial fermentation, but it reportedly has a much lower incidence of side effects. An expert predicted, "Inamed will drop Hylaform and move to Juvederm because Hylaform doesn't have duration. And Inamed will apply for FDA approval of Perlane soon." An Arizona doctor who is importing Juvederm for use now, said, "We use it a lot because of the cost of Restylane. It works as well or better than Restylane at a third the price."

Q-MED/MEDICIS'S Restylane

Restylane was generating a lot of interest and excitement at the meeting. All but one doctor questioned either has already started using Restylane or plans to do so soon. None of these sources has been importing Restylane from out of the country, and none indicated any plans to try to purchase it outside the U.S. now that it is FDA-approved. A Texas doctor said, "Restylane will really boom – more than Hylaform. It is easier to use and non-animal – things patients want."

So far, doctors who've tried Restylane seem to like it. An oculoplastic surgeon said, "I like it so far, but I haven't seen any patients at the end of six months yet…My procedure volume should go up because a lot of people have been wanting treatment, but they didn't want to waste money on collagen." Another doctor said, "You can get (results that last) six months out of it, and I've had patients look good for a year…This is more technique-dependent than the collagens. This is not collagen. You can't think of it like collagen. It doesn't inject like collagen, and the patient experience is different… Restylane is not for an individual with an event that same evening." An Arkansas doctor said, "Restylane is wonderful. It's softer than collagen, and it lasts longer. I recommend Restylane over collagen to everyone. Restylane will really cut collagen use, and it will expand the market."

The advantages of Restylane are:

- Is non-permanent.
- Provides a lot of volume, so it can be used to lift as well as fill.
- Is long-lasting.
- Requires no skin test.
- Can be stored at room temperature.
- Needle size is similar to other collagens (but smaller than with Perlane).
- Uses include lips, nasolabial folds, glabella (along with Allergan's Botox).

The disadvantages of Restylane are:

- **Side effects.** 10%-13% of Restylane patients get swelling, bruising, redness and lumps. A speaker said, "This usually lasts two to five days. It can last longer but less than two weeks." Another speaker said, "Swelling, bruising, redness and lumps occur in 10%-15% of patients and can last up to two weeks."
- **Pain.** The formulation does not include any pain killer. A doctor said, "Girls really cry when you do it, so you need to do something like a dental block."
- **Cost.**
- **Slower administration.** A Louisiana doctor said, "I wish Restylane were as easy to put in as Cosmoplast and Radiance."

Patients generally are ***not*** asking for Restylane by name, but they are coming in asking for the "new" filler. A Florida doctor said, "Patients want to know when the new stuff is coming, and our marketing is: 'The new stuff is here.'" A Virginia doctor said, "I offer it to all my patients, and give it if they want it. So far, all of them want it." A Colorado doctor said, "There is some patient demand, but it's not a lot."

Restylane is expected to result in a decreased use of other fillers, primarily Inamed's Cosmoderm, Cosmoplast, Zyplast and Zyderm. A doctor said, "A lot of my collagen patients now want Restylane instead." Another doctor said, "I haven't bought any collagen since I started Restylane." A third commented, "At first Restylane will still market share from other collagens, and then it will expand the market." A fourth said, "I'm no longer recommending collagen." A California doctor said, "Restylane will expand the market because it gives a very, very nice, natural look that lasts longer than collagen."

However, Restylane can be used in combination with both Botox and other fillers. Dr. Steven Cimerberg of Plantation FL said, "You can use Zyderm on top of Restylane on the lips or maybe even in nasolabial folds…Combination use may not be common at first, but it may become more common with time." Another Florida doctor said, "You may be able to extend the life of the filler with Botox. That hasn't been proven yet, but the company (Allergan) is suggesting that."

U.S. doctors pay $210 for a vial of Restylane, and most said they are charging patients $500-$600 for the first vial, though two doctors said they charge $700. The typical patient needs about two vials per treatment, and most doctors said they would discount the second vial (about $50). Thus, the margin on Restylane is fairly comparable to other fillers.

For patients Restylane is more expensive per treatment than collagen, but doctors do not expect any price resistance once they explain that Restylane lasts longer and cuts the number of procedures needed. A source explained, "Patients will pay $600 for Restylane that lasts six to eight months vs. $500 for Cosmoplast that lasts three months."

Average Restylane Pricing

Product	U.S. Physician Cost per vial	Patient Cost
Restylane	$210	$500-$600
Zyplast	$110	~$360
Cosmoplast	N/A	$500

Medicis' marketing was criticized by several doctors. A plastic surgeon said, "Medicis has been marketing to the public, and I disagree with that." A cosmetic surgeon said, "I had gotten Restylane from Canada and tried it before it was approved, so I knew it, but Medicis started off on the wrong foot with me. They wanted a credit rating before they would ship it to me, which I never had to do for a vendor before." An oculoplastic surgeon said, "Restylane will be a blitz, but I've been very disappointed with the Medicis marketing. They've had poor planning. I don't even have brochures."

Liquid Silicone

Doctors in Europe, and a few in the U.S., are injecting liquid silicone as a filler, but speakers cautioned to use it very carefully if at all. One said, "Very small silicone drops are as good as Artecoll or Restylane. I did a trial with SilSkin with impressive results…But patients will keep finding new spots to treat, and after 10 years, they will look like a pumpkin...Don't try to get rid of every wrinkle, or they will look like a freak…I told the manufacturer, it needs to limit how much a patient gets, but that's probably impossible." Doctors in the audience pointed out that medical malpractice carriers in many states will not cover silicone injections.

BOTULINUM TOXIN

Some doctors recently got a fax from the Chinese company offering an experimental botulinum toxin A at $500/vial. A speaker warned against ordering it, saying, "The question is what's in the vial. You don't know how the units compare to Botox. I would strongly caution against using this."

Company	Brand	Vial size	Botulinum Type	Characteristics
Allergan	Botox	100 units	Type A	The gold standard.
Elan	Myobloc	N/A	Type B	FDA-approved only for cervical dystonias, not for facial cosmesis. Sources reported it does not work for cosmesis and is more painful.
Inamed	Dysport	500 units	Type A	Dose comparison to Botox has not yet been determined. It may last longer than Botox.
(China)	Botox-A	N/A	Type A	Very little is known about this experimental product.

For a new botulinum toxin to take market share from Botox, doctors agreed it would have to:

1. Have equal efficacy.
2. Have equal safety.
3. Be cheaper and/or last longer.

Yet, several sources believe Inamed's Dysport will find a market if it gets FDA approval. A New York doctor said, "Some patients become immune to Botox. Dysport might be more effective for some patients. And it's another option…It may be more than a niche product, depending on the buzz and the price. But I doubt it will have more longevity."

There also is an undercurrent of animosity toward Allergan that could help a competitor take market share. Part of this is the normal reaction to any company with a monopoly. However, doctors are also very unhappy with the last two price increases Allergan imposed – and with the way it was done. One commented, "I would switch in a minute. Allergan has not had good public relations with doctors and patients."

ALLERGAN'S Botox (Vistabel in Europe)

With new botulinum toxins on the horizon, a speaker wondered, "Is it sunrise or sunset for Botox?" Dr. Alistair Carruthers, a noted Botox expert, emphasized the safety of Botox and commented, "Botox is a $500 million drug for Allergan, and the company is looking to make it a $1 billion drug…Botox rules, but Dysport is coming and probably others (botulinum toxins)…The competition may stimulate use." Dr. Jean Carruthers, another Botox expert, suggested that Botox has passed the innovator stage and may be near the top of the "early majority" stage, where consumer usage is still growing but nearing a peak. In the late majority stage, a product's usage falls off dramatically then levels off in the laggard stage. In contrast, dermal fillers are in a much earlier point of the "early majority" stage. A Florida doctor said, "Botox is not a fad, and it is not fading."

However, most doctors reported that Botox use is continuing to grow, especially for cosmetics. Dr. Kevin McBride of Dallas TX said, "With FDA approval for cosmesis, consumer confidence in Botox has increased. It had the negative aura of a 'poison,' and the FDA approval helped a fair amount in reducing questions and anxiety." Dr. David Felder of Ft. Lauderdale FL said, "I try to turn each patient I operate on into a Botox patient. I'm a 'platinum' level Botox user." Dr. Richard Dolsky of Bala Cynwyd PA said, "Use is growing. There were patients who were hesitant to use it before it was FDA approved for cosmetic uses. People are becoming more and more aware of Botox. The word-of-mouth is amazing. In 30 years, I haven't seen anything with this risk:benefit ratio. It has the lowest risk of anything."

Doctors also are finding some new uses for Botox. The results in men have traditionally not been as good as with women, but an expert said excellent results can be achieved with men if a larger dose is given. A few sources are injecting it to treat migraine headaches and/or hyperhidrosis, but none of these doctors are using it for Parkinson's Disease or urinary incontinence. A Canadian doctor said, "There is growing use for migraine. Seventy-five percent of patients improve. Botox is also being used for back pain, and we are trying it for tennis elbow."

There has been no change in the percentage of patients coming back for repeat procedures, but over time, patients often find they need fewer injections to maintain their appearance. A Florida doctor said, "The key is to get patients to come back before the Botox wears off completely because there is some 'muscle memory.' So, you need less treatments per year if you come in while you are still having some effect. There is no slowdown in retreatments in my practice. First-time patients may not come back in three moths, but repeat clients keep coming." An Oklahoma doctor said, "Treatment frequency tends to decrease over time." A Canadian doctor said, "Over time people use less Botox, but then they want it in a new location."

U.S. doctors pay about $467 for a 100 unit vial of Botox, but what they charge patients for it varies considerably. Generally, doctors charge patients between $11 and $15 per unit ($1,100 and $1,500 per vial), but one doctor said he charges $3,000 for that amount, and a few charge by area treated, not the amount of Botox used. A few doctors also dilute Botox so they can stretch it further and/or charge less. An Oklahoma doctor said, "When doctors charge by the area and not by volume used, they sometimes are tempted to use less Botox."

Consumers are very sensitive to the price of Botox, and they will shop price. Allergan raised the price of Botox twice over the past year or so, and doctors all said they absorbed the first price increase, and most also absorbed the second price increase. However, many have had to lower their Botox price because of competition from other, lower-priced doctors. A doctor said, "As the price goes up, the number of patients goes down…Patients are shopping doctors for price more. I've seen a slight dip in Botox usage based on competition." Another doctor said, "Some patients are shopping price, but patients want good results, and most will pay for a better result."

The new dermal fillers have not had – and initially are not expected to have – any impact on Botox use, either positive or negative. However, with time, Botox use may increase as patients get more comfortable with fillers. A Texas doctor said, "They do different things. Botox affects motion, and fillers affect relaxed areas and enlarge lips." A Canadian doctor said, "Restylane and Botox are synergistic. I use them together."

INAMED'S Dysport

Dysport is already sold in 70 countries to treat spasticity and neurological problems, and it was approved in South America in 2002 to treat frown lines. An expert estimated that Dysport has about 10% of the worldwide market for botulinum toxin.

There is little excitement among doctors about Dysport. A Texas doctor said, "There is more pain with Dysport, but otherwise it is similar to Botox – but it may not last as long. I can't see why anyone would use it." A Florida doctor said, "If it is as good as Botox, there will be a little price war, but it won't boost overall botulinum toxin sales, just share the market. People won't switch except for a cheaper price." Another doctor said, "Enough people are upset with Allergan, especially for raising prices, that there would be a market for a new botulinum toxin, provided it is cheaper and the efficacy is the same as Botox."

One of the key questions about Dysport is how many units equal one unit of Botox. A speaker suggested three units of Dysport may equal one unit of Botox but the estimates range from 2:1 to 5:1. Dr. Alistair Carruthers said, "Even though I had 75 patients with active drug (Dysport), I still don't have a really good feel (for the conversion)…The data from cervical dystonia doesn't really apply to the face, which we learned from Myobloc which worked pretty well in cervical dystonia."

The conversion rate also affects the cost to doctors and patients. Dr. Carruthers explained, "If a Dysport vial continues 500 units and costs twice what Botox costs, and you are working on a conversion of 2.5:1, then they are the same price…but that may or may not be true."

Is there a diffusion difference between Dysport and Botox? Dr. Carruthers said, "If you talk to people, they say one (Dysport) diffuses more than the other, and it is diffusion that is the crux here. Longevity everyone understands, but you can imagine ways to get different diffusion…At the present time, I don't think I see any difference between the two in terms of diffusion. I suggest you look very critically at unsubstantiated statements on diffusion differences."

A six-month, 119-patient, French trial studied 25-, 50- and 75-unit doses of Dysport. A speaker said, response rates were stable until the third month, and the comparison to Botox appeared to be 2:1, "At six months, a large percentage of Dysport patients are still satisfied…One-third are still responsive at six months, suggesting 50 units is optimal."

Other Dysport trials include:
Data from a 370-patient, four-site (U.S. and Canada), Phase II trial will be presented in February 2004 at the American Academy of Dermatology meeting in Washington, D.C.

- A 220-patient, German Phase II dose-ranging trial that started in July 2002.
- A 100-patient, French Phase III study of that started in October 2002.
- Data from a 370-patient, four-site (U.S. and Canada), Phase II trial will be presented in February 2004 at the American Academy of Dermatology meeting in Washington, D.C.
- A randomized, double-blind, Phase III trial (Study 52120) is due to start in spring 2004 at six sites in the U.S. and Canada. The design of the trial is still being finalized. An investigator admitted this will not prove whether Dysport is longer-lasting than Botox, "But this is the length the FDA wanted There is evidence from Europe that the results last six months." He said he expects the trial to show: comparability to Botox in terms of side effects and efficacy."
- An open label study will follow the Phase III U.S. trial.

KINETIX'S Genistein

Dr. Robert Baker, President of Kinetix, described this as an adjunct to botulinum toxin A that could prolong its effect. In animal studies the blink recovery after botulinum toxin A administration was delayed by a factor of two when genistein was co-administered. He said, "Sustained release Botox is impractical because of the size of the molecule. Blocking (nerve) sprouting is another alternative, and blocking return of the primary synapse is a third alternative…The ideal use of this product (genistein) awaits development of a controlled delivery system…It is two or three years from human clinical trials…We tried delivering it with a Controlled Delivery System (CDS) product, but that didn't work. We are not now working on a combination botulinum toxin/genistein product; initially, they will be separate injections."

BREAST AUGMENTATION

Doctors are very disappointed with the FDA's decision not to approve silicone breast implants until further study. A West Coast doctor said, "I'm very disappointed. There are good studies that silicone is safe." A Florida doctor said, "I don't care about silicone implants any more. I've been using saline implants with good results." A Pennsylvania doctor said, "It is unusual for the FDA to go against its advisory boards, but this is not the first time it has done that on breast implants." A Louisiana doctor said, "It was a bummer. The FDA is playing games with us. I thought approval would be a shoe-in." A Michigan doctor said, "It was politics."

Doctors were skeptical of the FDA guidelines for silicone breast implant approval, suggesting they basically mean silicone implants will not be approved for a very long time, if ever. A source said, "the FDA has set the bar so high that the companies may never be able to get a silicone implant approved." Another commented, "Eventually, silicone implants will be approved, but it will be a while."

There has been little patient outcry over the FDA decision. A doctor said, "Women accept saline." Another source said, "Women are not upset. They don't want to hear about

silicone." Another said, "If the public had any concern with gels before, this hardened it. Women are very confused. The new generation of women go saline and don't want anything else." A third said, "Patients are very happy with saline implants. Only a small group of women need gel." A Kentucky doctor said, "Only a small parentage of patients would even entertain the idea of silicone. It wouldn't be a quick sell, it would be gradual acceptance over time."

Most doctors had no patients on a waiting list for silicone implants, so there is unlikely to be a bolus of patients in the first half of 2004 who now have to get saline implants instead. A California doctor said, "The general population still doesn't think gel is safe."

Sources were aware of very few patients who traveled overseas to get silicone implants. None expect any significant number of patients to go to another country to get a silicone implant now that they will not be available in the U.S. for the near future.

Even if silicone implants had been approved, doctors are not very excited about cohesive gel matrix silicone implants. These implants probably have less chance of side effects from a rupture because of their gel-like consistency. Experts cited two reasons for the lack of enthusiasm for cohesive gel implants: (1) lack of knowledge about them, and (2) size. Doctors generally are using very small incisions to put in saline implants, but cohesive gel implants require larger implants. A source said, "Traditional silicone implants use a small incision, and saline implants use an even smaller incision. Cohesive gel implants can't be bent or folded, so they will need bigger incisions. Even if silicone were approved, I'm not sure cohesive gel implants would replace traditional silicone implants." Another doctor said, "Cohesive gel is good, but it is still gel. Patients will hear the word 'gel.'" A Kentucky doctor said, "Cohesive gel is absolutely an advance. It's a totally different product. It eliminates a lot of the worry of escaping silicone…The European experience has been good."

A Harvard doctor presented the results of a survey of 100 patients who had breast implants between 1992 and 2002, indicating that women are very satisfied with saline implants. The speaker commented, "This study made me aware that patient satisfaction with saline is very high, and I feel confident in continuing to use saline."

Asked to compare Mentor and Inamed/McGhan implants, doctors offered mixed responses. Some prefer one or the other, but most declared them comparable. Comments included:

- "There is not much difference, but Inamed implants are stiffer and thicker, and Mentor implants are softer."
- "The difference between McGhan and Mentor is public relations and preference."
- "Inamed has better service."
- "I use McGhan because it is a known product, but my mentor/teacher uses Mentor. Mentor implants are pricier and have greater variation in fill rates, but both are good companies."
- "They are pretty comparable. The pricing varies and is better for Mentor in one area of the country and for McGhan in another…Theoretically, Mentor implants may be better for very thin patients."

Responses to Saline Breast Implant Questionnaire

Question	YES
Completely satisfied	83%
Mostly satisfied	11%
Would you have the operation again?	91%
Did the surgery meet your expectations?	96%
Was the surgery a complete success	94%
Have you changed your clothing since the implants?	81%
Have you had comments on your appearance?	83%
Negative comments	0
Mixed comments	2%
Positive comments	98%
Did the implants make you more self-confident?	93%
Did they improve your sex life?	55%
Did you get noticed more?	68%
Did your social life improve?	34%
Did the surgery make you beautiful?	30%
Did it decrease your self-consciousness?	92%
Did the surgery make you look younger?	26%

IMPRA'S Pocket Protector

Dr. Mark Berman described this a new device (on which he has a patent) to facilitate breast implantation as an e-PTFE bladder that lines the breast pocket for the purpose of reducing the risk of capsule formation and rippling, while containing the implant within a confined space. The material is FDA-approved but the breast application is off-label. He explained how it works: "The Pocket Protector lines the pocket, allowing the implant to float inside it…This allows placement of a smooth-walled implant (preferably gel filled)…I find I'm getting the worst cases -- the women who fail over and over…and having good results." He suggested this device may help manufacturers get a silicone gel breast implant approved by containing any ruptured material.

The benefits he cited for Pocket Protector include:

- Soft breasts (prevents capsule contracture)
- Natural shape
- Prevents or minimizes rippling
- Barrier against implant rupture
- May provide a barrier against infection
- Maintains an internal brassiere to prevent sagging

- Makes implants more easily exchangeable
- May facilitate subcutaneous mastectomy

Dr. Berman has treated 29 patients since July 2003, with complications in five: two patients with "flu" syndrome who developed refractory seromas and three patients with rippling (very thin skin) in spite of use of smooth gel implants.

MISCELLANEOUS

Among the things that doctors think are exciting in the cosmetic surgery area are:

1. LUMENIS'S IPL (intense pulse light) laser. This photorejuvenation treatment can be used to remove age spots, sun damage, actinic keratosis, tattoo removal, and rosacea. Patients generally pay $500 per session, with perhaps five sessions needed to treat a moderate case of rosacea. The treatment is not permanent, and patients need maintenance touchups, probably every six months. An Arizona doctor who has ordered an IPL laser said, "It will be a smaller niche than resurfacing lasers. It will appeal to the mass market who don't want down-time procedures, but most people want more significant results."

A retrospective study of 17 patients treated with ALA-IPL was presented. Dusa Pharmaceuticals' Levulan (ALA, aminolevulinic acid HCl) was applied to the face for one hour. Then IPL was used. Patients were evaluated at one, four and 12 weeks. The speaker reported:

- 65% of actinic keratoses resolved after one treatment.
- 50% improvement in both telangiectasias and pigmentary irregularities.
- 25% improvement in skin coarseness.
- Minimal change in fine wrinkle appearance.
- Minimal side effects, including mild erythema and edema that lasted an average of three to five days.

2. COAPT SYSTEM'S Endotine Forehead fixation device. In March 2003, the company received FDA approval for this device, which assists in brow lift surgery. Coapt didn't have a booth at this meeting.

3. Endoscopic face lifts.

4. ERCHONIA MEDICAL LASER'S Erchonia laser. This non-invasive laser is the first cold laser (635 nm,) designed for liposuction. It also may be the only laser to get FDA approval for liposuction if the company's patents hold up; Erchonia has patents on the use of a cold laser for liposuction and on the specific device. In January 2002, this laser was approved by the FDA as a Class IIIa laser (indicating non-significant risk) for soft tissue pain management.

A new PMA will be submitted in the next month or two for five indications, including laser-activated liposuction, cosmetic and plastic surgery, accelerated wound healing and post-operative pain management. In support of this application, the company plans to submit the results of a randomized, double-blind, placebo-controlled trial conducted by four cosmetic surgeons.

A separate study by plastic surgeons is ongoing but will not be part of the application. The principal investigator for this study is V. Leroy Young of Washington University, chair of the Non-Surgical Procedures Committee of the American Society for Aesthetic Plastic Surgery.

Pivotal Trial Results

Measurement	Erchonia lasern=29	Placebo n=26
Primary endpoint VAS scale	72%	42%
Swelling at one week	16.92	58.38

For liposuction, a doctor passes the laser wand over the affected area (surgical segment) for a maximum of 12 minutes. The laser reportedly is cell-specific to fat cells, opening the pores of tumescent fat cells and allowing the liquid inside to seep out. That liquid is then suctioned out, though the company is investigating whether the body could absorb the liquid without suction.

The advantages appear to be:

- Less-invasive treatment.
- Less bruising and swelling.
- Less draining of serous fluid form the puncture wounds.
- Faster recovery time.

So far, about 1,500 lasers have been sold for pain and about 80 for cosmesis. An official said most cosmesis sales have been doctors replacing existing ultrasound liposuction machines. The machine costs $15,000, compared to $30,000 for a Mentor ultrasound machine. For burn wound healing, some doctors reported getting reimbursement of $350 per treatment from insurance carriers. There is no CPT code, but there are five ABC codes (codes used by alternative healthcare practitioners such as chiropractors). An Arizona doctor who plans to get trained on this laser said, "The data looks promising." Dr. Lewis Feder of New York City is dubious about this, "I wouldn't want liquefied fat in my body."

Several speakers discussed this device. A competitor said, "I love the product. I wish they had the science behind it." The President of the American Board of Cosmetic Surgery, Dr. Robert Jackson, said, "When I tried it on a patient, I hoped none of my colleagues would see me running the 'magic light' over patients…but when I talked to the patient in the recovery room, she said, 'What did you give me for pain?' I said, 'Nothing. All I used was a low level laser'…I did notice while doing it that the fat that came off did so much more liquid and seemed easier to get off…With this, there is less

pain, less bruising, smoother post-op results and easier extraction."

Erchonia is a privately held, family-owned company. The owners reportedly have turned down several offers to sell out, but they are considering dividing the company into two divisions and taking the cosmetic/plastic surgery division public – once the laser gets FDA approval for cosmesis.

5. Featherlift facelifts. This is a method of face and brow lift using a self-retaining suture. The technique was developed by two Russian doctors (a father-son team). For example, in one application, a needle carrying a special barbed thread is inserted near the ear and worked under the skin and out beside the nose. The needle is then removed, leaving the thread in place. The barbs hold the thread in place, and in a few days to weeks, the thread fibroses in place. The result is a light facelift without bruising, swelling or significant pain. It's a very slick procedure, and doctors were very interested in it. The needle and special thread are sold in the U.S. by KMI.

6. ATRIUM'S Advanta. This is a new FDA-approved e-PTFE implant for facial and periorofacial rejuvenation. Candidates include patients with microchelia and lip rhytids, nasolabial lipodystrophy, facial defects, post-rhinoplasty defects, etc. Dr. Jim Gilmore, an AACS trustee and an Advanta investigator, said, "There have been many generations of other e-PTFE products…but this one is very soft and pleasant to work with. In my hands, this is the e-PTFE with the most pleasing results." He said that in 512 patient implant sites, there was 85% patient satisfaction, no complications, no infections, asymmetry <1%, and an explantation rate of <.05%.

♦